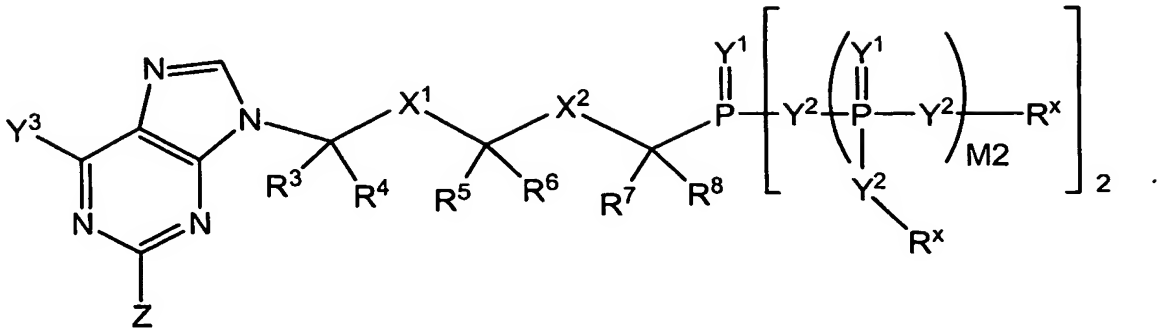
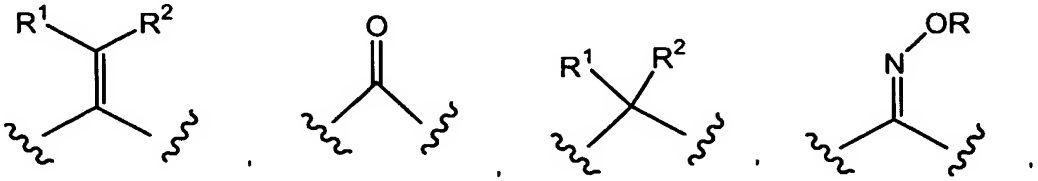
We claim:

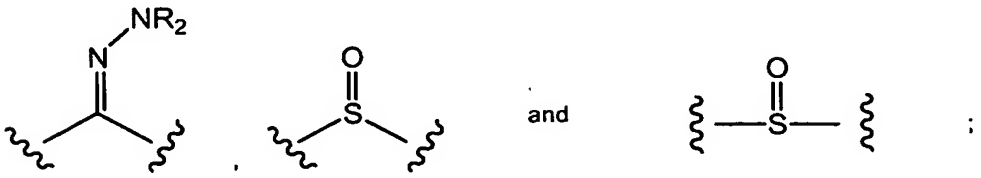
1. A composition having the formula:



wherein:

X^1 is selected from:





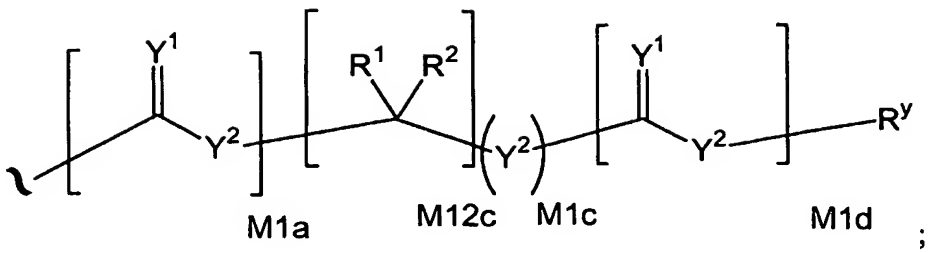
X^2 is selected from O, NR and S;

Y^1 is independently O, S, NR, $^+N(O)(R)$, $^+N(OR)$, $^+N(O)(OR)$, or $N–NR_2$;

Y^2 is independently a bond, O, NR, $^+N(O)(R)$, $^+N(OR)$, $^+N(O)(OR)$, $N–NR_2$, $-S(O)_{M2}-$, or $-S(O)_{M2}-S(O)_{M2}-$;

Y^3 and Z are independently selected from H, OH, OR, NR_2, CN, NO_2, F, Cl, Br, and I;

R^x is independently H, W^3, a protecting group, or the formula:



;

wherein:

M1a, M1c, and M1d are independently 0 or 1;

M12c is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12; and

R^y is independently H, W^3, or a protecting group;

M2 is 0, 1 or 2;

R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 are independently selected from H, F, Cl, Br, I, OH, $-C(=Y^1)R$, $-C(=Y^1)OR$ or $-C(=Y^1)N(R)_2$, $-N(R)_2$, $-^+N(R)_3$, -SR, $-S(O)R$, $-S(O)_2R$, $-S(O)(OR^x)$, $-S(O)_2(OR^x)$, $-OC(=Y^1)R^x$, $-OC(=Y^1)OR^x$, $-OC(=Y^1)(N(R^x)_2)$, $-SC(=Y^1)R^x$, $-SC(=Y^1)OR^x$, $-SC(=Y^1)(N(R^x)_2)$, $-N(R^x)C(=Y^1)R^x$, $-N(R^x)C(=Y^1)OR^x$, or $-N(R^x)C(=Y^1)N(R^x)_2$, amino ($-NH_2$), ammonium ($-NH_3^+$), alkylamino, dialkylamino, trialkylammonium, C_1–C_8 alkyl, C_1–C_8 alkylhalide, carboxylate, sulfate, sulfamate, sulfonate, 5-7 membered ring sultam, C_1–C_8 alkylsulfonate, C_1–C_8 alkylamino, 4-dialkylaminopyridinium, C_1–C_8 alkylhydroxyl, C_1–C_8 alkylthiol, alkylsulfone ($-SO_2R$), arylsulfone ($-SO_2Ar$), arylsulfoxide (–SOAr), arylthio (–SAr), sulfonamide ($-SO_2NR_2$), alkylsulfoxide (–SOR), ester ($-C(=O)OR$), amido ($-C(=O)NR_2$), 5-7 membered ring lactam, 5-7 membered ring lactone, nitrile (–CN), azido ($-N_3$), nitro ($-NO_2$), C_1–C_8 alkoxy (–OR), C_1–C_8 alkyl, C_1–C_8 substituted alkyl, C_1–C_8 alkenyl, C_1–C_8 substituted alkenyl, C_1–C_8 alkynyl, C_1–C_8 substituted alkynyl, C_6–C_{20} aryl, C_6–C_{20} substituted aryl, C_2–C_{20} heteroaryl, C_2–C_{20} substituted heteroaryl, polyethyleneoxy, and W^3; or

when taken together, two of R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 form a carbocyclic ring of 3 to 7 carbon atoms;

R is C_1–C_8 alkyl, C_1–C_8 substituted alkyl, C_1–C_8 alkenyl, C_1–C_8 substituted alkenyl, C_1–C_8 alkynyl, C_1–C_8 substituted alkynyl, C_6–C_{20} aryl, C_6–C_{20} substituted aryl, C_2–C_{20} heteroaryl, C_2–C_{20} substituted heteroaryl;

W^3 is W^4 or W^5;

W^4 is R, $-C(Y^1)R$, $-C(Y^1)W^5$, $-SO_2R$, or $-SO_2W^5$;

W^5 is carbocycle or heterocycle wherein W^5 is independently substituted with 0 to 3 R groups;

with the proviso that when R^3, R^4, R^5, R^6, R^7, and R^8 are each H, Y^1 and Y^2 are O and M2 is 0, then R^x is not H.

2. The composition of claim 1 wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 are H.

3. The composition of claim 1 wherein R3 is C_{1-8} alkyl.

4. The composition of claim 1 wherein R3 is C_{1-8} substituted alkyl.

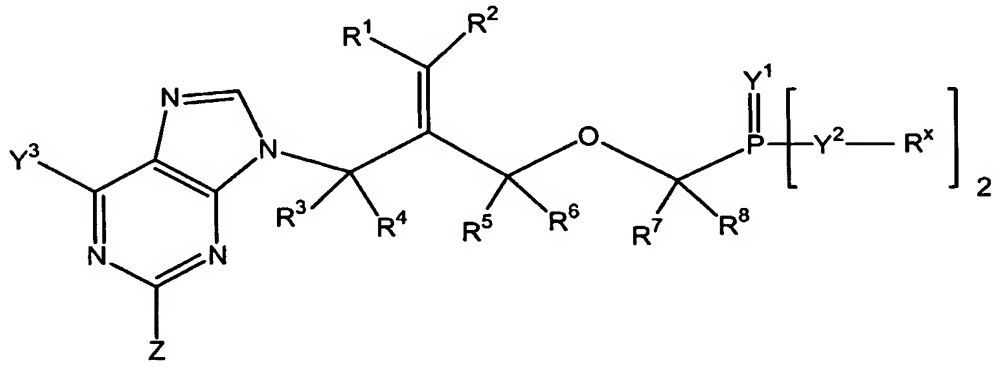
5. The composition of claim 4 wherein R3 is 1-hydroxyethyl.

6. The composition of claim 1 wherein R5 is C_{1-8} alkyl.

7. The composition of claim 1 wherein R5 is C_{1-8} substituted alkyl.

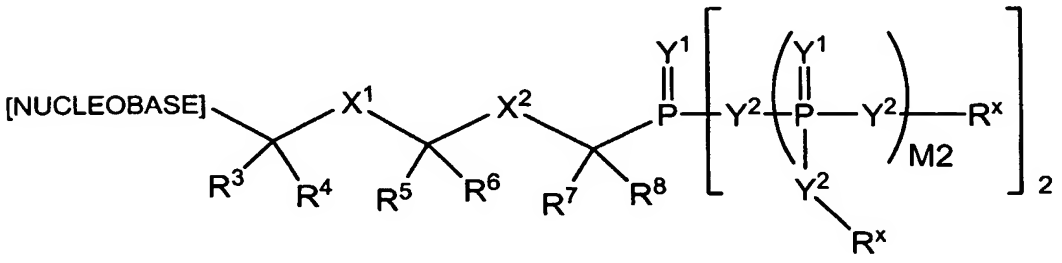
8. The composition of claim 7 wherein R5 is 1-hydroxyethyl.

9. The composition of claim 1 having the formula:



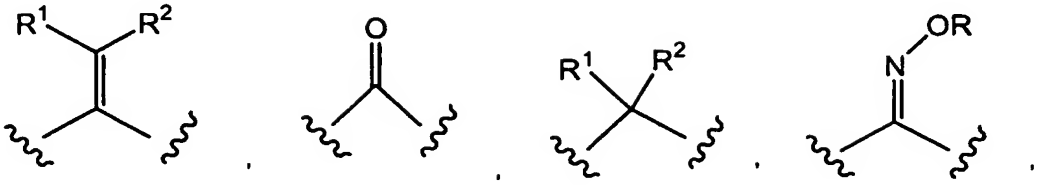
10. The composition of claim 3 wherein R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 are H.

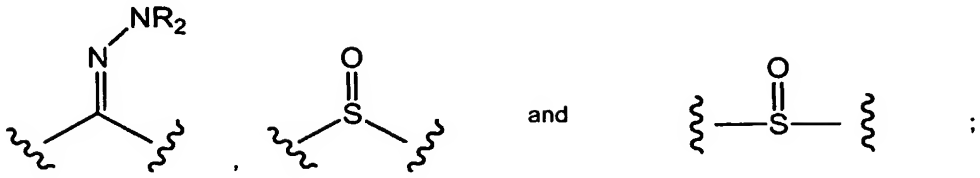
11. A composition having the formula:



wherein:

X^1 is selected from:





;

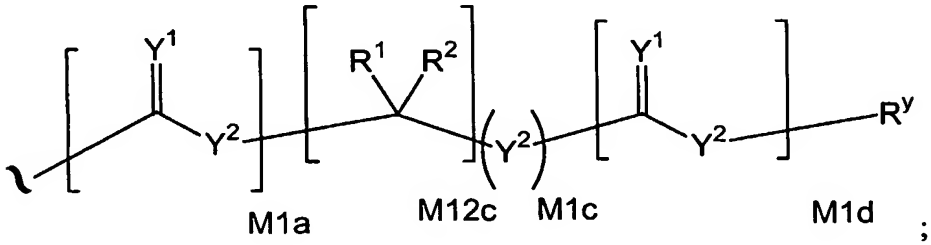
X^2 is selected from O, NR and S;

Y^1 is independently O, S, NR, $^+N(O)(R)$, $^+N(OR)$, $^+N(O)(OR)$, or $N–NR_2$;

Y^2 is independently a bond, O, NR, $^+N(O)(R)$, $^+N(OR)$, $^+N(O)(OR)$, $N–NR_2$, $-S(O)_{M2}-$, or $-S(O)_{M2}-S(O)_{M2}-$;

Y^3 and Z are independently selected from H, OH, OR, NR_2, CN, NO_2, F, Cl, Br, and I;

R^x is independently H, W^3, a protecting group, or the formula:



;

wherein:

M1a, M1c, and M1d are independently 0 or 1;

M12c is 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12; and

R^y is independently H, W^3, or a protecting group;

M2 is 0, 1 or 2;

R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 are independently selected from H, F, Cl, Br, I, OH, $-C(=Y^1)R$, $-C(=Y^1)OR$ or $-C(=Y^1)N(R)_2$, $-N(R)_2$, $-^+N(R)_3$, -SR, -S(O)R, $-S(O)_2R$, $-S(O)(OR^x)$, $-S(O)_2(OR^x)$, $-OC(=Y^1)R^x$, $-OC(=Y^1)OR^x$, $-OC(=Y^1)(N(R^x)_2)$, $-SC(=Y^1)R^x$, $-SC(=Y^1)OR^x$, $-SC(=Y^1)(N(R^x)_2)$, $-N(R^x)C(=Y^1)R^x$, $-N(R^x)C(=Y^1)OR^x$, or $-N(R^x)C(=Y^1)N(R^x)_2$, amino ($–NH_2$), ammonium ($–NH_3^+$), alkylamino, dialkylamino,

trialkylammonium, C_1–C_8 alkyl, C_1–C_8 alkylhalide, carboxylate, sulfate, sulfamate, sulfonate, 5-7 membered ring sultam, C_1–C_8 alkylsulfonate, C_1–C_8 alkylamino, 4-dialkylaminopyridinium, C_1–C_8 alkylhydroxyl, C_1–C_8 alkylthiol, alkylsulfone (–SO_2R), arylsulfone (–SO_2Ar), arylsulfoxide (–SOAr), arylthio (–SAr), sulfonamide (–SO_2NR_2), alkylsulfoxide (–SOR), ester (–C(=O)OR), amido (–C(=O)NR_2), 5-7 membered ring lactam, 5-7 membered ring lactone, nitrile (–CN), azido (–N_3), nitro (–NO_2), C_1–C_8 alkoxy (–OR), C_1–C_8 alkyl, C_1–C_8 substituted alkyl, C_1–C_8 alkenyl, C_1–C_8 substituted alkenyl, C_1–C_8 alkynyl, C_1–C_8 substituted alkynyl, C_6–C_{20} aryl, C_6–C_{20} substituted aryl, C_2–C_{20} heteroaryl, C_2–C_{20} substituted heteroaryl, polyethyleneoxy, and W^3; or

when taken together, two of R^1, R^2, R^3, R^4, R^5, R^6, R^7, and R^8 form a carbocyclic ring of 3 to 7 carbon atoms;

R is C_1–C_8 alkyl, C_1–C_8 substituted alkyl, C_1–C_8 alkenyl, C_1–C_8 substituted alkenyl, C_1–C_8 alkynyl, C_1–C_8 substituted alkynyl, C_6–C_{20} aryl, C_6–C_{20} substituted aryl, C_2–C_{20} heteroaryl, C_2–C_{20} substituted heteroaryl;

W^3 is W^4 or W^5;

W^4 is R, -C(Y^1)R, -C(Y^1)W^5, -SO_2R, or -SO_2W^5;

W^5 is carbocycle or heterocycle wherein W^5 is independently substituted with 0 to 3 R groups;

with the proviso that when R^3, R^4, R^5, R^6, R^7, and R^8 are each H, Y^1 and Y^2 are O and M2 is 0, then R^x is not H.

12. The composition of claim 5 wherein NUCLEOBASE is selected from adenine, guanine, cytosine, uracil, thymine, 7-deazaadenine, 7-deazaguanine, 7-deaza-8-azaguanine, 7-deaza-8-azaadenine, inosine, nebularine, nitropyrrole, nitroindole, 2-aminopurine, 2-amino-6-chloropurine, 2,6-diaminopurine, hypoxanthine, pseudouridine, pseudocytosine, pseudoisocytosine, 5-propynylcytosine, isocytosine, isoguanine, 7-deazaguanine, 2-thiopyrimidine, 6-thioguanine, 4-thiothymine, 4-thiouracil, O^6-methylguanine, N^6-methyladenine, O^4-methylthymine, 5,6-dihydrothymine, 5,6-dihydrouracil, 4-methylindole, and a pyrazolo[3,4-D]pyrimidine.

13. The composition of claim 11 wherein R3 is C1-8 alkyl.

14. The composition of claim 11 wherein R3 is C1-8 substituted alkyl.

15. The composition of claim 14 wherein R_3 is 1-hydroxyethyl.

16. The composition of claim 11 wherein R_5 is C_{1-8} alkyl.

17. The composition of claim 11 wherein R_5 is C_{1-8} substituted alkyl.

18. The composition of claim 17 wherein R_5 is 1-hydroxyethyl.

19. A method for the treatment or prevention of the symptoms or effects of HIV infection in an infected animal comprising administering said animal with a pharmaceutical composition or formulation comprising an effective amount of a compound of claim 1.

20. A method for the treatment or prevention of the symptoms or effects of HIV infection in an infected animal comprising administering said animal with a pharmaceutical composition or formulation comprising an effective amount of a compound of claim 11.

21. A method for the treatment or prevention of the symptoms or effects of HIV infection in an infected animal comprising administering said animal with a pharmaceutical combination composition or formulation comprising an effective amount of a compound of claim 1 and a second compound having anti-HIV properties.

22. A method for the treatment or prevention of the symptoms or effects of HIV infection in an infected animal comprising administering said animal with a pharmaceutical combination composition or formulation comprising an effective amount of a compound of claim 11 and a second compound having anti-HIV properties.

23. A pharmaceutical composition comprising an effective amount of a compound of claim 1, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable diluent, carrier or excipient.

24. A pharmaceutical composition comprising an effective amount of a compound of claim 11, or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable diluent, carrier or excipient.